

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A photomultiplier tube comprising:

a cathode emitting electrons in response to incident light;

a plurality of dynodes multiplying electrons emitted from the cathode, each dynode extending in a prescribed direction, the plurality of dynodes having a first dynode ~~having an edge in the prescribed direction and a second dynode having an edge in the prescribed direction, dynode,~~ the first dynode receiving electrons from the cathode and multiplying the electrons and emitting the multiplied electrons, and the second dynode receiving the electrons from the first dynode and multiplying the electrons and emitting the multiplied ~~electrons;~~ electrons, the first dynode having a first end face and a second end face opposite the first end face, the first end face and the second end face extending perpendicularly to the prescribed direction and the second dynode having a first end and a second end; and

~~potential regulating means disposed in a prescribed position between the edge of the first dynode and the edge of the second dynode, and smoothing an equipotential surface in a space between the first dynode and the second dynode along the prescribed direction.~~ direction, the potential regulating means including a first regulating element and a second regulating element that is separate from the first regulating element, the first regulating element being located between the first end face of the first dynode and the first end of the second dynode in a direction perpendicular to the prescribed direction and the second regulating element being located between the second end face of the first dynode and the second end of the second dynode in the direction perpendicular to the prescribed direction.

2. (Currently Amended) The photomultiplier tube as claimed in Claim 1, wherein ~~the potential regulating means~~ each of the first and second regulating elements is a plate-shaped electron lens forming electrode ~~disposed between the edge of the first dynode and the edge of the second dynode and~~ arranged substantially parallel to ~~a side wall of the first dynode~~ the first and second end faces and ~~separated~~ separate from the first dynode; and a voltage is applied to ~~the electron lens forming electrode~~ each of the first and second regulating elements to produce a higher potential than the potential of the first dynode.

3. (Currently Amended) The photomultiplier tube as claimed in Claim 2, wherein the plurality of dynodes further have a third dynode having an edge and another edge in the prescribed direction and receiving the electrons from the second dynode and multiplying and emitting the electrons, wherein the ~~electron lens forming electrode~~ first regulating element is electrically connected to the edge of the third ~~dynode~~ dynode and the second regulating element is electrically connected to the another edge of the third dynode.

4. (Currently Amended) The photomultiplier tube as claimed in Claim 2, wherein the ~~electron lens forming electrode~~ is separated first and second regulating elements are separate from the plurality of dynodes.

5. (Currently Amended) The photomultiplier tube as claimed in Claim 2, further comprising a ~~second electron lens forming electrode~~ a third regulating element that is a plate-shaped electron lens forming electrode, that is disposed between ~~an edge of the first end of the second dynode and an edge~~ the edge of the third dynode, dynode and that is arranged substantially parallel to the ~~electron lens forming electrode and separated from~~ first and second regulating elements, and that is separate from the second dynode; and

wherein a voltage is applied to the ~~second electron lens forming~~ third regulating element ~~electrode~~ to produce a higher potential than the potential in the second dynode.

6. (Currently Amended) The photomultiplier tube as claimed in Claim 5, ~~wherein the second electron lens forming electrode is integrally formed with the electron lens forming electrode, further comprising a fourth regulating element that is a plate-shaped electron lens forming electrode, that is disposed between the second end of the second dynode and the another edge of the third dynode, that is arranged substantially parallel to the first and second regulating elements, and that is separate from the second dynode,~~

wherein the third regulating element is integrally formed with the first regulating element, and the fourth regulating element is integrally formed with the second regulating element.

7. (Currently Amended) The photomultiplier tube as claimed in Claim 2, wherein the cathode, the dynodes, and the ~~lens forming electrode~~ first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

the dynodes are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

~~the lens forming electrode~~ each of the first and second regulating elements forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

8. (Currently Amended) The photomultiplier tube as claimed in Claim 3, further comprising ~~a second electron lens forming electrode~~ a third regulating element that is a plate-

shaped electron lens forming electrode, that is disposed between an edge the first end of the second dynode and an edge the edge of the third dynode and dynode, that is arranged substantially parallel to the electron lens forming electrode and separated first and second regulating elements, and that is separate from the second dynode; and

wherein a voltage is applied to the ~~second electron lens forming electrode~~ third regulating element to produce a higher potential than the potential in the second dynode.

9. (Currently Amended) The photomultiplier tube as claimed in Claim 4, further ~~comprising~~ comprising:

~~a second electron lens forming electrode~~ a third regulating element that is a plate-shaped electron lens forming electrode, that is disposed between an edge the first end of the second dynode and an edge the edge of the third dynode and dynode, that is arranged substantially parallel to the electron lens forming electrode and separated first and second regulating elements, and that is separate from the second dynode; and

wherein a voltage is applied to the ~~second electron lens forming electrode~~ third regulating element to produce a higher potential than the potential in the second dynode.

10. (Currently Amended) The photomultiplier tube as claimed in Claim 8, ~~wherein the second electron lens forming electrode is integrally formed with the electron lens forming electrode~~ further comprising:

a fourth regulating element that is a plate-shaped electron lens forming electrode, that is disposed between the second end of the second dynode and the other edge of the third dynode, that is arranged substantially parallel to the first and second regulating elements, and that is separate from the second dynode,

wherein the third regulating element is integrally formed with the first regulating element, and the fourth regulating element is integrally formed with the second regulating element.

11. (Currently Amended) The photomultiplier tube as claimed in Claim 9, ~~wherein the second electron lens forming electrode is integrally formed with the electron lens forming electrode, further comprising:~~

a fourth regulating element that is a plate-shaped electron lens forming electrode, that is disposed between the second end of the second dynode and the other edge of the third dynode, that is arranged substantially parallel to the first and second regulating elements, and that is separate from the second dynode,

wherein the third regulating element is integrally formed with the first regulating element, and the fourth regulating element is integrally formed with the second regulating element.

12. (Currently Amended) The photomultiplier tube as claimed in Claim 3, wherein the cathode, the dynodes, and ~~the lens forming electrode~~ the first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

the dynodes are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

~~the lens forming electrode~~ each of the first and second regulating elements forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

13. (Currently Amended) The photomultiplier tube as claimed in Claim 4, wherein the cathode, the dynodes, and ~~the lens-forming electrode~~ the first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

the dynodes are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

~~the lens-forming electrode~~ each of the first and second regulating elements forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

14. (Currently Amended) The photomultiplier tube as claimed in Claim 5, wherein the cathode, the dynodes, and ~~the lens-forming electrode~~ the first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

the dynodes are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

~~the lens-forming electrode~~ each of the first and second regulating elements forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

15. (Currently Amended) The photomultiplier tube as claimed in Claim 6, wherein the cathode, the dynodes, and ~~the lens-forming electrode~~ the first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

the dynodes are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

~~the lens-forming electrode~~ each of the first and second regulating elements forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

16. (Currently Amended) The photomultiplier tube as claimed in Claim 8, wherein the cathode, the dynodes, and ~~the lens-forming electrode~~ the first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

~~the dynodes~~ each of the first and second regulating elements are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the

hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

the lens forming electrode forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

17. (Currently Amended) The photomultiplier tube as claimed in Claim 9, wherein the cathode, the dynodes, and ~~the lens forming electrode~~ the first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

the dynodes are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

~~the lens forming electrode~~ each of the first and second regulating elements forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

18. (Currently Amended) The photomultiplier tube as claimed in Claim 10, wherein the cathode, the dynodes, and ~~the lens forming electrode~~ the first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

the dynodes are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

~~the lens-forming electrode~~ each of the first and second regulating elements forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

19. (Currently Amended) The photomultiplier tube as claimed in Claim 11, wherein the cathode, the dynodes, and ~~the lens-forming electrode~~ the first and second regulating elements are disposed in a hermetically sealed vessel that is cylindrical in shape and sealed on both ends;

the light enters the hermetically sealed vessel from one end thereof;

the dynodes are concave and substantially arc-shaped, the first dynode opening substantially toward the one end of the hermetically sealed vessel, the second dynode opening substantially toward another end of the hermetically sealed vessel, and the third dynode opening substantially toward the one end of the hermetically sealed vessel, and the electrons impinge on and are emitted from inner surfaces of the dynodes; and

~~the lens-forming electrode~~ each of the first and second regulating elements forms a fan shape that follows the concave shape of the first dynode when viewed in a cross section along a direction orthogonal to the inner surfaces of the first dynode, second dynode, and third dynode.

20. (Currently Amended) The photomultiplier tube as claimed in ~~Claim 2,~~
~~wherein the first dynode further has another edge opposite the edge of the first dynode in the~~
~~prescribed direction and the second dynode further has another edge opposite the edge of the~~
~~first dynode in the prescribed direction,~~Claim 1,

~~wherein the potential regulating means each of first and second regulating elements~~
~~has a pair of plate-shaped electron lens forming electrodes, one of the pair of plate-shaped~~
~~electron lens forming electrodes being arranged between the edge of the first dynode and the~~
~~edge of the second dynode and the other of the pair of plate-shaped electron lens forming~~
~~electrodes being arranged between the another edge of the first dynode and the another edge~~
~~of the second dynode.~~electrodes.

21. (Currently Amended) The photomultiplier tube as claimed in Claim 20,
wherein the ~~pair of~~plate-shaped electron lens forming electrodes face each other.